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10/577,324	04/28/2006	Koichiro Take	28969 IUS40PCT	4964
22850	7590	04/09/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER THOMAS, ERIC W				
ART UNIT		PAPER NUMBER		
2831				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/577,324

Applicant(s)

TAKE, KOICHIRO

Examiner

Eric Thomas

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 18 is/are allowed.
6) ☒ Claim(s) 1-15, 17 and 19-31 is/are rejected.
7) ☒ Claim(s) 16 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 4/06
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

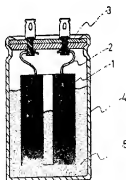
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 55-156431 ('431).

1 .4



'431 discloses in fig. 1-2, a capacitor, comprising: an external casing (4); a capacitor element (1) enclosed in the external casing; and a heat conductive material (5) having heat conductivity of 1 W/m-K or more, wherein the heat conductive material is disposed

between the external casing and the capacitor element so as to be in contact with the external casing and the capacitor element. Although the '431 reference does not expressly state that the heat conductive material has a heat conductivity of 1 W/m-K or more, it is understood to be an inherent feature. When the structure recited in the references is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent.

Regarding claim 2, '431 discloses the heat conductive material having heat conductivity of 1 W/m-K or more is a heat conductive material comprising alumina dispersed in a matrix material (polypropylene).

Regarding claim 3, '431 discloses the heat conductive material having heat conductivity of 1 W/m-K or more is a heat conductive material in which alumina particles are dispersed in a matrix material.

Regarding claim 4, '431 discloses an average particle diameter of the particle is between 3-4 μm .

Regarding claim 5, '431 discloses a content rate of the particle in the heat conductive material is 70 mass% or more.

Regarding claim 6, '431 discloses the matrix material is silicone oil and/or denatured silicone oil.

Regarding claim 7, '431 discloses a synthetic resin is used as the matrix material.

Regarding claim 8, '431 discloses the synthetic resin is polyolefin.

Regarding claim 9, '431 discloses the polyolefin is polypropylene.

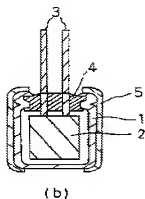
Regarding claim 10, '431 discloses the heat conductive material is in contact with the capacitor element by 30% or more of a height of the capacitor element.

Regarding claim 11, '431 discloses wherein the external casing is made of aluminum.

Regarding claim 12, '431 discloses the capacitor is an electrolytic capacitor.

Regarding claim 13, '431 discloses the capacitor element includes an anode foil, a cathode foil, and a separator disposed between the anode foil and the cathode foil.

4. Claims 14-15, 17, 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 05-243102 ('102).



'102 discloses in fig. 1b, an electrolytic capacitor, comprising: an external casing (1) made of aluminum (see example – paragraphs 10-12); and a capacitor element (2) enclosed in the external casing, wherein an external peripheral surface of the external casing is covered with an insulation film (see paragraphs 10-12).

Regarding claim 15, '102 discloses the insulation film is an aluminum oxide film (paragraphs 10-12).

Regarding claim 17, '102 discloses a capacitor comprising an external casing made of aluminum; and a capacitor element enclosed in the external casing, wherein an external peripheral surface of the external casing is covered with an anodic oxide film formed by a surface treatment.

Regarding claim 30, '102 discloses the capacitor is an electrolytic capacitor.

Regarding claim 31, '102 discloses the capacitor element includes an anode foil, a cathode foil, and a separator disposed between the anode foil and the cathode foil.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-243102 ('102).

'102 discloses the claimed invention except that the thickness of the alumina film is 1 to 20 μm .

It would have been an obvious matter of design choice to form the alumina film of '102 having a thickness of 1 to 20 μm , since such a modification would have involved a mere change in the size of a component, a change in size is generally recognized as being within the level of ordinary skill in the art. *In re. Rose*, 105 USPQ 237 (CCPA 1955).

8. Claims 20-24, 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 05-243102 ('102) in view of JP 55-156431 ('431).

'102 discloses the claimed invention except that the capacitor further comprises a heat conductive material having heat conductivity of 1 W/m-K or more disposed between the external casing and the capacitor element so as to be in contact with the external casing and the capacitor element.

'431 teaches that forming a heat conductive material between the external casing and the capacitor element so as to be in contact with the external casing and the capacitor element improves heat dissipation of the capacitor element.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of '102 by forming a heat conductive material between the external casing and the capacitor element so as to be in contact

with the external casing and the capacitor element, since such a modification would improve the heat dissipation of the capacitor element.

Regarding claim 21, '431 teaches that the heat conductive material having heat conductivity of 1 W/m-K or more is a heat conductive material comprising alumina dispersed in a matrix material (polypropylene).

Regarding claim 22, '431 discloses the heat conductive material having heat conductivity of 1 W/m-K or more is a heat conductive material in which alumina particles are dispersed in a matrix material.

Regarding claim 23, '431 teaches that an average particle diameter of the particle is between 3-4 μm .

Regarding claim 24, '431 teaches that a content rate of the particle in the heat conductive material is 70 mass% or more.

Regarding claim 25, '431 teaches that the matrix material is silicone oil and/or denatured silicone oil.

Regarding claim 26, '431 teaches that a synthetic resin is used as the matrix material.

Regarding claim 27, '431 teaches that the synthetic resin is polyolefin.

Regarding claim 28, '431 teaches that the polyolefin is polypropylene.

Regarding claim 29, '431 teaches that the heat conductive material is in contact with the capacitor element by 30% or more of a height of the capacitor element.

Allowable Subject Matter

9. Claim 18 is allowed.

10. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest (in combination with the other claim limitations) a capacitor wherein the insulating film is a aluminum nitride film (claim 16); and a capacitor wherein an external peripheral surface of the external casing is covered with an aluminum nitride film formed by a surface nitriding treatment (claim 18)

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5,587,869 – high voltage capacitor

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Thomas/
Primary Examiner, Art Unit 2831

Application Number**Application/Control No.**

10/577,324

**Applicant(s)/Patent under
Reexamination**

TAKE, KOICHIRO

Examiner

Eric Thomas

Art Unit

2831